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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/961,391	09/25/2001	Kenneth J. Carstensen		5498

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Arlington, VA 22202

EXAMINER

FLANDRO, RYAN M

ART UNIT	PAPER NUMBER
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3679

DATE MAILED: 07/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/961,391

Applicant(s)

CARSTENSEN, KENNETH J.

Examiner

Ryan M Flandro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 3,4,6-14,16,17 and 19-27 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18 and 28-30 is/are allowed.
- 6) ☒ Claim(s) 1,2,5 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

2. The rejection of claims 18 and 28 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, is withdrawn in view of Applicant's amendment.

Claim Rejections - 35 USC § 102

3. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Larsson (US 4,968,068).
 - a. Claim 1. Larsson (see primarily figure 2) shows a connection for sucker rods used in strings in petroleum wells comprising a pair of sucker rods **12' and 12''**, each having a pin end **11' and 11''** with a flat traverse end face **16' and 16''** and at least an adjacent male threaded section **10' and 10''**; a coupler **18'** having at least two interior female threaded sections **17' and 17''** receiving the male threaded sections **10' and 10''** of the pin ends **11' and 11''**, wherein the pin ends **11' and 11''** of the sucker rods **12' and 12''** include coupler end engagement members **14' and 14''** spaced apart from the end faces **16' and 16''**. Larsson further discloses the pin ends **11' and 11''** being dimensioned in length relative to the coupler **18'** to provide compressional loading forces between opposing end faces **16' and 16''** of the pin ends **11' and 11''** when the male **10'**

and 10" threaded sections are matingly inserted to preselected penetrations in the coupler **18'** past engagement of the coupler engagement members **14' and 14"** with the coupler ends **18A'** (see figure 2; column 1 lines 56-59; column 2 lines 13-22; column 2 line 42 – column 3 line 42).

b. Claim 2. Larsson further shows the preselected penetration (see especially column 1 lines 13-22 & column 3 lines 1-10) for each pin end **11' and 11"** being to a chosen displacement beyond insertion to a hand tight plane, whereby (**inherently**) lengths of the pin end sections **11' and 11"** from the end faces **16' and 16"** are in compression and coextensive lengths of the coupler **18'** are in tension and the mating threads **10' and 10"**; **17' and 17"** lock under prestress to inhibit relative movement (see figure 2; column 1 lines 56-59; column 2 lines 13-22; column 2 line 42 – column 3 line 42).

Anticipation requires that a single prior art reference discloses, either expressly or under the principles of inherency, each and every element of the claimed invention. In re King, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986); RCA Corp. v. Applied Digital Data Sys., Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir.), cert. dismissed, 468 U.S. 1228 (1984). Anticipation, however, does not require such disclosure *in haec verba*. In re Bode, 550 F.2d 656, 660, 193 USPQ 12, 16 (CCPA 1977). In addition, it does not require that the prior art reference "teach" what the application at issue teaches. Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 218 USPQ 781 (Fed. Cir. 1983). Finally, Applicant is reminded that during examination claim limitations are to be given their broadest reasonable reading. In re Zletz, 893 F.2d 319,

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321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969). Larsson, as applied above, is believed to meet these requirements.

Claim Rejections - 35 USC § 103

4. Claim 5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larsson, as applied above, in view of any one of Reding et al (US 6,328,499) (Reding), Watson et al (US 5,347,881) (Watson) and Carlson (US 4,205,926).

a. Claim 5. Larsson, as applied above, lacks disclosure of a torque washer of a selected axial dimension with flat transverse sides and disposed centrally in the coupler between the pin end faces and engaged on each side by the flat end faces of the pin ends. It is well known in the art, however, to provide a "torque washer" or divider between the end faces of two adjacent rods within a sleeve in order to more securely fix the connection, provide prestress to both screwed connections (see Reding figure 1 and column 2 lines 5-34) and to provide the capability of substituting more compressible insulating materials between the rods (see Carlson figures 6-10 and column 13 line 55 – column 14 line 57).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include a torque washer in the connection of Larsson since this is well known in the art as evidenced by any one of Reding, Watson and Carlson.

b. Claim 15. Larsson, as applied above, lacks disclosure of a torque element of a selected axial length disposed in the central region of the coupler and having transverse end faces; the end faces of the pin ends engaging the opposite end faces of the torque

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element. It is well known in the art, however, to provide a “torque element” or divider between the end faces of two adjacent rods within a sleeve in order to more securely fix the connection, provide prestress to both screwed connections (see Reding figure 1 and column 2 lines 5-34) and to provide the capability of substituting more compressible insulating materials between the rods (see Carlson figures 6-10 and column 13 line 55 – column 14 line 57). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include a torque washer in the connection of Larsson since this is well known in the art as evidenced by any one of Reding, Watson and Carlson.

Response to Arguments

5. Applicant's arguments filed 4/21/04 have been fully considered but they are not persuasive.

a. Applicant's first argument is that Larsson discloses a “thread coupling” for a “drill string” as opposed to a connection for “sucker rods”. The argument is without merit. The Examiner notes that although Applicant is entitled to be his/her own lexicographer, the mere recitation that the connected members are “sucker rods” does not amount to a patentable distinction over the “drill rods” shown and disclosed in Larsson. There is no apparent structural distinction recited in the claims. Applicant is again reminded that, during examination, claim limitations are to be given their broadest reasonable reading.

In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); In re Prater, 415

F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969). Thus, the Examiner believes he is justified in defining rods 12' and 12'' as "sucker rods".

Moreover, the basis of Applicant's first argument is that the Larsson "drill string" connection confronts a different problem (absorbing impact loads from repeated percussions) than the problem disclosed in the instant application for a sucker rod connection (maximizing cyclic life over millions of cycles of alternating tension and compression loads). Importantly, anticipation does not require that the prior art reference "teach" what the application at issue teaches. Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 218 USPQ 781 (Fed. Cir. 1983). In this regard, the problem that each connection is intended to solve does not obviate the fact that Larsson shows and discloses the claimed structure. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, Applicant points out that Larsson discloses a "percussive drilling" combination with "no clear description of the usage of his percussive drill" (see p.14 of Applicant's Remarks of 4/21/04). In the Examiner's view, this argument goes against Applicant's argument that Larsson's connection cannot be used outside of a "percussion drilling" application.

b. Applicant's second argument is that Larsson (fig. 2) teaches the opposing end faces 16' and 16'' are separated by a gap δ until the threads wear down and that compression forces are thus precluded. The Examiner respectfully disagrees and believes that Applicant misunderstands the fundamental teachings of the Larsson connection. Although figure 2 of Larsson *shows* a small gap δ between the end faces, the

specification clearly *discloses* that the gap δ “**nominally is chosen to be zero** but with a positive manufacturing tolerance in the magnitude of 1mm” and that “the manufacturing tolerance of the gap is chosen to be either **zero** or a positive value up to 1mm” (see column 3 lines 3-7). Larsson then explicitly states that “the **tolerance is chosen so as not to be negative**, so that the gap is either zero or positively greater than zero, but not positively greater than about 1mm” (see column 3 lines 9-10). Furthermore, Larsson states that “it is possible that the manufacturing step will result in the presence of both a shoulder stop and a bottom stop” (see column 2 lines 19-21) and that “the thread coupling according to the invention will achieve both shoulder stop and a bottom stop” (see column 3 lines 15-16).

The Examiner understands the abovementioned recitations in the Larsson disclosure to essentially mean that Larsson intended there to be a bottom stop *and* a shoulder stop in the best manufacturing circumstances, but in no case would there be a gap between the ends greater than 1mm. In this way, Larsson for all intents and purposes set forth a range of manufacturing tolerances for the gap between and including zero and 1mm. This construction (where the gap is zero and the connection has both a shoulder stop and a bottom stop) is deemed to read on the connection as currently claimed and thus, to inherently “provide compressional loading between opposing faces.” Thus, the recitation of general legal principal set forth above (see paragraph 3b) is not meant to stretch the teachings of Larsson or restrict the instant claims, but rather to set forth the basic framework under which the Examiner has applied and interpreted the Larsson reference.

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c. Applicant's third argument is that the limitations recited in claim 2 are to a "fundamentally different structure, purpose and combination." Applicant focuses on the recitation of "the pre-selected penetration for each pin end [being] to a chosen displacement beyond insertion of the coupler end engagement members to the hand tight plane." Again, in accordance with the general legal principals set forth above, the structure shown and disclosed in Larsson is understood to explicitly and inherently read on each of the limitations in claim 2. For example, depending on the disclosed range of manufacturing tolerances in Larsson (0 to 1mm gap) between the ends of the engagement members 12' and 12", the Examiner believes that the connection shown in figure 2 will have "the pre-selected penetration for each pin end [being] to a chosen displacement beyond insertion of the coupler end engagement members to the hand tight plane" regardless of whether or not the phrase "hand tight plane" is stated in the Larsson disclosure as this does not add to or alter the ultimate structure of the connection. Furthermore, as described above, the Examiner understands the structure of Larsson to place the pin end sections "in compression" with "co-extensive length of the coupler in tension" when the gap δ is zero. Thus, the rejection of claim 2 is maintained.

d. Lastly, with respect to Applicant's arguments regarding claims 5 and 15, the Examiner again points out that Larsson discloses that the gap δ can be zero. With this in mind, it is not contrary to the teachings of Larsson to include a central element such as a torque washer against which both engagement member ends might bear if the gap δ was zero. The rejection of claims 5 and 15 is believed to be proper.

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Allowable Subject Matter

6. Claims 18, 28, 29 and 30 are allowed.
7. The statement of reasons for the indication of allowable subject matter was set forth in the previous Office action mailed 09 January 2004.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan M Flandro whose telephone number is (703) 305-6952. The examiner can normally be reached on 8:30am - 5:30pm Mon-Fri.

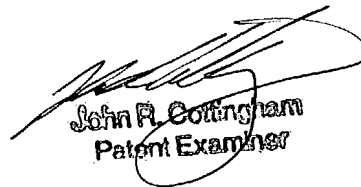
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (703) 308-2686. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RMF

July 15, 2004


John R. Cottingham
Patent Examiner